

REMARKS

I. Introduction

In response to the pending final Office Action, Applicants have amended claim 8 in order to overcome the § 112 rejections and to further clarify the subject matter of the present disclosure. In addition, new claims 15-23 were added. Support for the amendment to claim 8 and for new claim 15 may be found, for example, in Fig. 1 of the drawings. Support for new claims 16 and 20 may be found, for example, in paragraph [0057] and Fig. 3. Support for new claims 17 and 21 may be found, for example, in paragraph [0062]. Support for new claims 18 and 22 may be found, for example, in paragraphs [0064] and [0066]. Support for new claims 19 and 23 may be found, for example, in paragraph [0067]. No new matter has been added.

A Request for Continued Examination (RCE) is being filed concurrently with this Amendment.

Applicants respectfully submit that all pending claims are patentable over the cited prior art for the reasons set forth below.

II. The Rejection Of Claims 8-13 Under 35 U.S.C. § 102

Claims 8-13 were rejected under 35 U.S.C. § 102(b) as being anticipated by Guidash (USP No. 6,657,665). Applicants respectfully submit that Guidash fails to anticipate the pending claims for at least the following reasons.

With regard to the present disclosure, amended independent claim 8 recites, in-part, a solid-state imaging apparatus comprising a substrate, a first pixel formed on the substrate including a first photodiode, a first transfer transistor and a first floating diffusion, a second pixel formed on the substrate adjacent to the first pixel including a second photodiode, a second

transfer transistor and a second floating diffusion, and using the upper left corner with respect to the plane of the substrate of each of the first pixel and the second pixel as a reference point, the first photodiode and second photodiode are substantially equal in shape and intra-pixel location, and the first floating diffusion and second floating diffusion are substantially equal in size and intra-pixel location.

One feature of amended claim 8 is that the first photodiode and second photodiode are substantially equal in shape and intra-pixel location, and the first floating diffusion and second floating diffusion are substantially equal in size and intra-pixel location, when using the upper left corner with respect to the plane of the substrate of each of the first pixel and the second pixel as a reference point.

As is shown in Fig. 1 of the drawing, floating diodes 206 are formed in a down direction compared to its corresponding photodiode 201. As a result of this feature, there is no difference between ways of an incident light into the first photodiode and the second photodiode, so the sensitivity of the first pixel and the second pixel can be more accurate.

It is alleged in the Office Action that because the reference points for the intra-pixel positions of the photodiodes and floating diffusions were not specified in the claim, Guidash anticipates claim 8.

However, as independent claim 8 has been amended to include the limitation using the upper left corner with respect to the plane of the substrate of each of the first pixel and the second pixel as a reference point, Applicants submit that the claim now contains a specific reference point for comparing the photodiode and floating diffusion. Guidash does not disclose such a specific relationship. Furthermore, the Office Action states that the first floating diffusion is viewed upward from the first photodiode while the second floating diffusion is viewed

downward from the second photodiode. As such, the Office Action admits that the first and second floating diffusions and the first and second photodiodes are not substantially equal in shape and intra-pixel location, respectfully.

Anticipation under 35 U.S.C. § 102 requires that each element of the claim in issue be found, either expressly described or under principles of inherency, in a single prior art reference, *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 218 USPQ 781 (Fed. Cir. 1983). As, at a minimum, Guidash does not disclose a solid-state imaging apparatus comprising a substrate, a first pixel formed on the substrate including a first photodiode, a first transfer transistor and a first floating diffusion, a second pixel formed on the substrate adjacent to the first pixel including a second photodiode, a second transfer transistor and a second floating diffusion, and using the upper left corner with respect to the plane of the substrate of each of the first pixel and the second pixel as a reference point, the first photodiode and second photodiode are substantially equal in shape and intra-pixel location, and the first floating diffusion and second floating diffusion are substantially equal in size and intra-pixel location, it is clear that Guidash does not anticipate claim 8, or any claims dependent thereon. Furthermore, this feature is not obvious even for a person having an ordinary skill in the art. Accordingly, as all rejections of claim 8 have been addressed, Applicants submit that claim 8 is patentable over the prior art.

III. All Dependent Claims Are Allowable Because The Independent Claim From Which They Depend Is Allowable

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as claim 8 is patentable for the reasons

set forth above, it is respectfully submitted that all pending dependent claims are also in condition for allowance.

In addition, new claim 15 exhibits the feature of a first transfer transistor and an amplifier transistor formed parallel to each other with respect to the longest edge of each of the first transfer transistor and the amplifier transistor. In contrast, as shown in Fig. 4 of Guidash, the transfer gates 23 (TG_a and TG_b) and the source follower input signal transistor are formed perpendicular to each other. As such, Guidash fails to anticipate new claim 15, or any claims dependent thereon.

IV. Conclusion

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication of which is respectfully solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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